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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/692,175	10/22/2003	James P. Siepmann	LTL003US	8352

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PATENT LAW OFFICES OF DAVID MILLERS
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EXAMINER	
SEDIGHIAN, REZA	

ART UNIT	PAPER NUMBER
2613	

MAIL DATE	DELIVERY MODE
04/11/2012	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/692,175	SIEPMANN, JAMES P.	
	Examiner	Art Unit	
	M. R. SEDIGHIAN	2613	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *13 January 2012*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ An election was made by the applicant in response to a restriction requirement set forth during the interview on _____; the restriction requirement and election have been incorporated into this action.

4)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

5)☒ Claim(s) *1,2,5-7,9,10,13-15 and 24-26* is/are pending in the application.

5a) Of the above claim(s) _____ is/are withdrawn from consideration.

6)☐ Claim(s) _____ is/are allowed.

7)☒ Claim(s) *1,2,5-7,9,10,13-15 and 24-26* is/are rejected.

8)☐ Claim(s) _____ is/are objected to.

9)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

10)☐ The specification is objected to by the Examiner.

11)☒ The drawing(s) filed on *4/19/2004* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

12)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

1. This communication is responsive to applicant's 1/13/2012 amendments and remarks. The amendments have been entered. Claims 1-2, 5-7, 9-10, 13-15, and 24-26 are now pending.

2. The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

3. Claims 7 and 15 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. As to claims 7 and 15, specification does not describe how the optical switching system is configured to compare an actual arrival time of an optical pulse that has been propagated through the optical timing system to an expected arrival time of the optical pulse and to direct the optical pulses from the semiconductor laser through the first, second, or third time-quantifiable optical path depending on a difference between the actual arrival time and the expected arrival time.

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claims 7 and 15 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

As to claims 7 and 15, it is not clear how the optical switching system is configured to compare an actual arrival time of an optical pulse that has been propagated through the optical timing system to an expected arrival time of the optical pulse and to direct the optical pulses from the semiconductor laser through the first, second, or third time-quantifiable optical path depending on a difference between the actual arrival time and the expected arrival time.

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

7. Claims 1-2, 5-6, 9-10, 13-14, and 24-26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Spanke (US Patent No: 5,402,256) in view of Trepagnier et al. (US Patent Application Publication No: 2004/0114211 A1).

Regarding claims 1 and 9, Spanke teaches in an optoelectronic timing system (30, fig. 3), an optical compensation method for advancing or retarding (for example, by use of optical delay paths 40) an optical signal (OPTICAL INPUT, fig. 3) within a pre-defined pathway (34, 36, fig. 3), the method comprising: configuring a light source to generate optical light signals (the generated OPTICAL INPUT signal, fig. 3); configuring a first optical waveguide (40_1, fig. 3) to define a first time-quantifiable optical path for the optical signal (the time delay provided by the optical path 40_1, fig. 3); configuring a second optical waveguide (40_2, fig. 3) to define a second time-quantifiable optical path (the time delay provided by the optical path 40_2) for the signal from the first waveguide, wherein the length of the second time quantifiable optical path has a

defined numerical relationship to the length of the first time quantifiable optical path (note that the second path is longer than the first path), such that the light traversing the second path (40_2, fig. 3) has a travel time lengthened by a specific quantity (col. 3, lines 15-29) with respect to the same light traversing the first path (40_1, fig. 3); and operating an optical switching system (nxn OPTICAL SWITCH, fig. 3) to direct one of the optical signals (the OPTICAL INPUT signal, fig. 3) from the light source (col. 3, lines 51-56) through the first optical waveguide (40_1, fig. 3) or the second optical waveguide (40_2, fig. 3). Spanke differs from the claimed invention in that Spanke does not specifically disclose the light signals are optical pulses (or subnanosecond optical pulses) that are generated by a semiconductor laser, and the optical switching system direct the light signals (or optical pulses) through the first optical waveguide or the second optical waveguide depending on when another of the optical signals (or optical pulses) emerges from the optoelectronic timing system. Trepagnier teaches an optical signal transmission system (26, fig. 2A) with a semiconductor laser (paragraph 0031 and 10, fig. 2A) that generates optical pulses (12, fig. 2A), and wherein an optical switch (28, fig. 2A) can be controlled (30, fig. 2A) to direct the received optical pulses to a first or second waveguide (for example, 84a, 84b, fig. 5) depending on when another of optical pulses emerges from the light source (paragraphs 0013, 0014, lines 1-7, paragraph 0032, lines 16-20, paragraph 0042). Therefore, it would have been obvious to a person of ordinary skill in the art at the time of invention to incorporate a semiconductor laser pulse generator, and an optical switch with a controller, such as the ones disclosed by Trepagnier, for the optical signal generation and optical switching system of Spanke, to further generate short duration optical pulses and to switch such pulses to different optical waveguides 40, based on the arrival time of optical signals, to further provide and

efficient optical signal transmission and distribution within the transmission system and between different optical delay paths.

Regarding claims 2 and 10, Spanke further teaches a third optical waveguide (40_0, fig. 3) coupled to the optical timing system (30, fig. 3) and to the optical switching system (32, fig. 3), the third waveguide (40_0, fig. 3) being configured to define a third time-quantifiable optical path (the length of the optical path 40_0) for the signal light, different from the first (40_1, fig. 3) and second (40_2, fig. 3) time quantifiable optical paths, wherein lengths of the first and third optical paths have numerical relationships (the length of path 40_1 is different than the length of the path 40_0), such that light signal traversing the first path defines a nominal travel time (the nominal travel time through path 40_1), light traversing the second path (40_2, fig. 3) has a travel time lengthened by a specific quantity with respect to the same pulse traversing the first path (the travel time through the second path 40_2 is longer than the first path 40_1), and light traversing the third path has a travel time shortened by a specific quantity with respect to the same light traversing the first path (the travel time through the third path 40_0 is shorter than the first path 40_1).

Regarding claim 5, Spanke further teaches a first path for propagating the optical signals (the path 34, fig. 3) and a second path for propagating the optical signals that have propagated through the timing system (the output path 36, fig. 3), wherein the first (34, fig. 3) and second paths (36, fig. 3) are operationally coupled to the optical switching system (32, fig. 3), wherein arrival times of optical signals on the first (34, fig. 3) and second paths (36, fig. 3) control operation of the optical switching system (32, 42, fig. 3) such that each optical signal from the light source is directed through the first, second, or third time-quantifiable optical path (note that

optical switch 32 can be controlled to direct the received light signals to the respective first, or second, or third optical paths 40). As to control the switch based on arrival times of optical signals, Trepagnier teaches an optical switch can be controlled to switch optical signals (or pulses) to different paths, based on the arrival times, as discussed above for claims 1 and 9.

As to claims 6 and 14, Trepagnier teaches the laser light source (10, fig. 3) can develop pulses at a rate defining a time spaced-apart fundamental frequency (paragraphs 0013, 0031) for an optoelectronic timing system (10, 12, Beam Switching Channels Versus Time, fig. 2A).

Regarding claim 13, Spanke further teaches receiving a first signal light (the OPTICAL INPUT signal, fig. 3) on a first path (34, fig. 3) from the optical timing system to the switching system (32, fig. 3); and receiving a second signal light from the light source on a second path to the switching system (for example, one of the signal paths 40), wherein operating the switching system is controlled (42, fig. 3) such that it can determine (col. 3, lines 51-64) whether the second signal is directed through the first, second, or third time-quantifiable optical path (the optical delay paths 40, fig. 3). As to control the switch based on arrival times of optical signals, Trepagnier teaches an optical switch can be controlled to switch optical signals (or pulses) to different paths, based on the arrival times, as discussed above for claims 1 and 9.

Regarding claim 24, Spanke teaches the optoelectronic system comprises a photodiode (note that receiving the optical output signals from the switching system 30, by use of a photodiode is well known).

Regarding claim 25, Spanke teaches the optical switching system (32, fig. 3) switches (OPTICAL SWITCH, fig. 3) an input path (34, fig. 3) for the optical signal (OPTICAL INPUT, fig. 3) from the light source to the optical timing system (col. 3, lines 10-18, 51-56).

Regarding claim 26, Spanke teaches the optical switching system (32, fig. 3) switches the input path (34, fig. 3) to the optical timing system (40, fig. 3) on relative timing of the optical signal from the light source relative to optical signal that have propagated through the optical timing system (note that optical switch 32 can be controlled to direct the received light to the respective optical delay paths 40). As to switch the optical signals (or pulses) based on relative timing of the signals from the light source relative to optical signals that have propagated through the timing system, Trepagnier teaches an optical switching system that can be controlled to switch optical signals (or pulses) to different paths, based on the arrival times, as discussed above for claims 1 and 9.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to M. R. SEDIGHIAN whose telephone number is (571)272-3034. The examiner can normally be reached on 10 to 6:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kenneth Vanderpuye can be reached on (571) 272-3078. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would

like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/M. R. SEDIGHIAN/
Primary Examiner, Art Unit 2613